

# Liver Enzymes and Non-Alcoholic Fatty Liver Disease: Important Factors in Assessing Patterns of Clinical Management in Type-2 Diabetes Patients [Letter]

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## Dear editor

Recently, an original study titled “Statin Prescription Patterns and Associated Factors Among Patients with Type 2 Diabetes Mellitus Attending Diabetic Clinic at Muhimbili National Hospital, Dar es Salaam, Tanzania”<sup>1</sup> was published by Aneth Telephore Bideberi et al in the reputable journal “Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy”. Firstly, I would like to congratulate the authors and acknowledge their successful publication.

This hospital-based cross-sectional study, conducted in an outpatient setting, discussed the patterns and predictors correlated with statins prescription among type 2 diabetes mellitus (T2DM) patients. This study further stratified patients according to the risk of cardiovascular disease. Although this study was successful in identifying age, medical insurance, and hypertension as potential factors of statin prescription, I feel the study fails to identify aspartate aminotransferase (AST) and alanine aminotransferase (ALT), which have been significantly associated with cardiovascular diseases (CVD) in T2DM patients. Furthermore, this study provides an incomplete understanding of the patient demographics as non-alcoholic fatty liver disease (NAFLD) is not included, which remains vital in prescribing statins.

Multiple studies have proven AST and AST-to-ALT ratio as a predictor of CVD. Although AST is released from multiple tissues, including the myocardium and the liver, ALT is only liver-dependent. Thus, increased AST-to-ALT ratio indicates CVD<sup>2</sup> through various potential mechanisms, including increased insulin resistance, chemical mediators of inflammation, and oxidative stress.<sup>3</sup> Lazo et al significantly correlated elevated AST and ALT levels with cardiac biomarkers; troponin T and NT-proBNP.<sup>4</sup> Hence, cementing the role of AST and ALT in subclinical myocardial injury. Thus, to identify patterns in statins prescriptions for prevention of CVD, it is pertinent to include AST and ALT levels in the patient profile as they are crucial markers in T2DM patients at risk of CVD.

Moreover, NAFLD has been increasingly associated with T2DM; as much as 70–80% of T2DM patients have NAFLD.<sup>5</sup> Thus, it is essential to identify and diagnose NAFLD in T2DM patients to formulate an efficacious treatment plan. As NAFLD is correlated with increased prevalence of CVD (coronary, cerebrovascular, and peripheral vascular disease), [5] its diagnosis is paramount in the prescription of statins to better the prognosis in T2DM patients.

It is evident from the above-mentioned articles that to formulate a treatment plan and assess the prescription patterns of statins in T2DM patients at risk of CVD, the inclusion of NAFLD and transaminases levels is of immense importance. Further large-scale studies must be conducted with a well-formulated methodology to understand this association better.

## Disclosure

The author reports no conflicts of interest for this communication.

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